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| 10/686,738 | 10/17/2003 | Brett D. Shoelson | 31978-198060 | 8221 |
| 26694 | 7590 | 06/01/2005 | EXAMINER | |
| VENABLE LLP | | | LARKIN, DANIEL SEAN | |
| P.O. BOX 34385 | | | ART UNIT | |
| WASHINGTON, DC 20045-9998 | | | PAPER NUMBER | |

2856

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,738

Applicant(s)SHOELSON, BRETT D. **Examiner**

Daniel S. Larkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 21, 23, and 24 is/are allowed.
- 6) ☒ Claim(s) 1-20, 22 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because of the following:

Lead lines are not used in the figures to correlated reference numerals to their respective structures.

The curve represented by reference numeral "58" does not appear to be seen in Figures 4 and 5. The lead line appears to be pointing to an area where no curve appears in the figures.

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3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Reference numerals -- 52 -- and -- 54 -- do not appear within Figure 5 as suggested by the disclosure on page 7, paragraph [00028], lines 3 and 4 and page 8, paragraph [00028], line 2.

Reference numeral -- 76A -- does not appear within Figure 6 as suggested by the disclosure on page 12, paragraph [00037], line 4.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

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examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

Page 3, paragraph [0008], line 3: The abbreviation "GUI" should be initially spelled out so one can understand the meaning of the abbreviation.

Page 5, paragraph [00022], line 10: The "comma" after the term "it" should be deleted.

Page 11, paragraph [00036], line 2: The term "other" should be corrected to read -- another --; or the term "point" should be corrected to read -- points --. Appropriate correction is required.

Claim Objections

6. Claims 12-20 and 25 are rejected to because of the following informalities:

Re claim 12, claim line 3: The abbreviation "GUI" should be spelled out initially, so one can be clear as to what the abbreviation represents.

Re claim 25, claim line 3: The abbreviation "GUI" should be spelled out initially, so one can be clear as to what the abbreviation represents. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. Claims 1-20, 22, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, claim line 11: A “residual error” associated with what condition or measurement is determined and reduced? The claim fails to identify which residual error is being corrected among many potential error sources, such as creep or thermal drift.

Re claim 22, claim lines 1 and 2: A “residual error” associated with what condition or measurement is reduced? The claim fails to identify which residual error is being corrected among many potential error sources, such as indentation depth, the solved contact mechanics, creep, or any number of potential errors.

Re claim 25, claim line 3: How does one utilize a second GUI if a first GUI has not been previously recited?

Allowable Subject Matter

8. The following is a statement of reasons for the indication of allowable subject matter:

Prior art was not relied upon to reject claims 1-25 because the prior art fails to teach and/or make obvious the following:

Claims 1-20: Providing a computer readable medium allowing a computer to perform the following: parsing an AFM data file based on a user input to obtain

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deflection of a cantilever; determining an indentation depth of the tip into the sample based at least in part on the deflection; and solving a selected model of contact mechanics based on the input analysis using the determined indentation depth in combination with all of the remaining limitations of the claim.

Claims 21-25: Providing a system for gathering and analyzing data comprising: means for parsing an AFM data file based on a user input to obtain deflection of a cantilever; means for determining an indentation depth of the tip into the sample based at least in part on the deflection; and means for solving a selected model of contact mechanics based on the input analysis using the determined indentation depth in combination with all of the remaining limitations of the claim.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art to US 5,193,383 (Burnham et al.) discloses a mechanical and surface force nanoprobe, whereby an AFM is utilized to make surface force measurements and hardness measurements of a sample surface. The probe can be used to measure the elastic and plastic behavior of the sample by the indentation of the surface with the probe.

The prior art to US 5,866,807 (Elings et al.) discloses a method and an apparatus for measuring mechanical properties on a small scale by utilizing a cantilever to create indentations on a sample surface.

The prior art to US 6,134,954 (Suresh et al.) discloses a depth sensing indentation and methodology for mechanical property measurements whereby an automated indenter system is utilized to perform tests on samples based on parameters inputted into the indenter by a user.

The prior art to US 6,883,367 (Feng et al.) discloses a method for measuring elastic properties of a sample object by utilizing an indenter or an AFM and means for correcting errors due to creep in the measuring system.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin
AU 2856
24 May 2005


DANIEL S. LARKIN
PRIMARY EXAMINER